

TOPIC	LEARNING OUTCOME
Introduction to Python, Assignment Statement & Data Types, Modules & Scripts	The idea is to begin using Python as a calculator wherein concepts like variables and assigning values to them is introduced. A variable can be of three types: integer, floats(that is with decimals) and strings(that is any character like alphabets, punctuation, digits). A module is essentially a .py file which houses Python code, a bunch of statements known also known as a script.
Conditional Execution, Modules & Functions and their working	At times a condition needs to be checked for a certain set of statements to be executed, which can be done using if-else constructions. A fourth data type is introduced known as Boolean which can hold either the value True or False. Modules can also house functions which are certain statements performing particular tasks, over and over again.
String Methods, Iteration with Strings	Certain alterations that can be performed due to built in functions on strings is introduced. For example, count the frequency of 'p' in the word 'apple'. Iteration is all about repeated calculation which requires for loops. For example, count all the digits in a random string, say, 'abcd123def456' and much more.
Iteration Using the range Function	Performing repeated calculations on not only strings but numbers and other objects too using for loops. For example, print the first n numbers and much more.
Randomness	Introducing concepts of probabilities using the random module along with for loops for extensive calculations
Introduction to Procedures through Graphics	Using all of the above knowledge along with new graphics specific functions, Python supports drawing rectangles, circles and other shapes, combined too.
Iteration with While	An alternative to a for loop which works on the idea of a condition to be satisfied in order for a set of statements to run. This requires Boolean thinking.
Lists of Numbers	The concept of packaging a sequence of numbers or strings in a single entity is introduced as a list.
Lists of Strings	The concept of packaging a sequence of numbers or strings in a single entity is introduced as a list.
Lists are Objects	Everything comes down to being an object which performs a certain task, in Python programming, from variables containing strings or numbers to lists, thus building towards Object Oriented Programming.
Dictionaries, Two Dimensional Arrays	Dictionaries serve as an alternative to lists, to organise data which require a different method of execution. 2D arrays become necessary when dealing with data that has both columns and rows (looks something like an Excel sheet).
Recursion	A high level concept which works on the idea of a function repeatedly calling itself till asked to stop. It is helpful when the same pattern is to be repeated on some data.
Searching a List	Two types of searching methods are introduced like linear and binary search, where in the latter is faster and more efficient than the former, especially when dealing with large data.
Sorting a List	Arranging the data in a list in ascending or descending order, or in an alphabetical order, to organise data.
Theory of Concepts such as Classes, Object Oriented Programming, Inheritance	Classes help us create a design of our own type packaged into one entity. Inheritance is the idea of building on what already exists. Both are essential to what is known as Object Oriented Programming

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